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Abstract

IRRADIATION EXPERIMENTS ON URANIUM-RICH ALLOYS

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Collaboration between C.N.E.N., A.N. and N.P.P.C. has led to a large-scale irradiation experiment, conducted with the aim of increasing knowledge of irradiation damage in fuels and subsequently developing irradiation stable alloys. The first part, described in this paper, compares the behaviour of heat-treated adjusted uranium with some molybdenum alloys at two different temperatures, with and without thermal cycling. Special emphasis was placed on the unusual features of exact simulation of the thermal history of each in-pile specimen.

Finally, the authors report the results obtained so far, as for instance grain size effect in adjusted uranium, effect of thermal cycling together, re-crystallinization and metallographic changes in the alloys due to thermal and irradiation effects.